

## **REMARKS**

[0001] Applicant respectfully requests entry of the following remarks and reconsideration of the subject application. Applicant respectfully requests entry of the amendments herein. The remarks and amendments should be entered under 37 CFR. § 1.116 as they place the application in better form for appeal, or for resolution on the merits.

[0002] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-59 are presently pending.

### **Statement of Substance of Interview**

[0003] The Examiner graciously talked with me—the undersigned representative for the Applicant—on October 16, 2008. Applicant greatly appreciates the Examiner’s willingness to talk. Such willingness is invaluable to both of us in our common goal of an expedited prosecution of this patent application.

[0004] During the interview, I discussed how the claims differ from the cited reference, namely Bommareddy. I understood the Examiner to recognize the intent of the claims, and to suggest that the location of both the source host and the target host within the same cluster be more clearly recited in the claims.

[0005] I understood the Examiner to agree to review the cited art more carefully and/or do another search, upon receipt of the proposed claim amendments and arguments.

[0006] Applicant herein amends the claims in the manner discussed during the interview. Accordingly, Applicant submits that the pending claims are allowable over the cited reference of record for at least the reasons discussed during the interview.

#### **Formal Request for an Interview**

[0007] If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can discuss this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0008] Please contact me or my assistant to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for us, I welcome your call to either of us as well. Our contact information may be found on the last page of this response.

#### **Allowable Subject Matter**

[0009] Applicant would like to thank the Examiner for indicating that claims 14-18, 33-37, and 50-52 would be allowable if rewritten in independent form. Applicant submits that the independent claims from which these claims depend are allowable. Accordingly, Applicant has not amended these claims to an independent form herein.

## **Claims Amendments**

**[0010]** Applicant herein amends claims 1, 6, 8, 11, 12, 14, 16, 20, 25, 27, 30, 31, 33, 35, 37, 39, 54, 55, and 57-59.

**[0011]** Claims 1, 20, 39, 54 are amended to more clearly indicate that both the target host and the source host are hosts within the same cluster.

**[0012]** Claims 6, 8, 11, 14, 16, 25, 27, 30, 31, 33, 35, 37, 55, and 57-59 are amended to improve readability.

## **Formal Matters**

[0013] This section addresses any formal matters (e.g., objections) raised by the Examiner.

### **Claims**

[0014] The Examiner objects to claims 14-18, 33-37, and 50-52 as being dependent upon a rejected base claim, but indicates that these claims would be allowable if rewritten in independent form. Claims 14-18 ultimately depend upon independent claim 1. Claim 1, as explained below, is in condition for allowance. Similarly, claims 33-37 ultimately depend upon independent claim 20, and claims 50-52 ultimately depend upon independent claim 39. Claims 20 and 39, as explained below, are in condition for allowance. Accordingly, Applicant respectfully requests that the objection to claims 14-18, 33-37, and 50-52 be withdrawn.

## **Substantive Matters**

### **Claim Rejections under § 102**

[0015] The Examiner rejects claims 1-13, 19-32, 38-49 and 53-59 under § 102. For the reasons set forth below, the Examiner has not shown that the cited reference anticipates the rejected claims. Accordingly, Applicant respectfully requests that the § 102 rejections be withdrawn and the case be passed along to issuance.

[0016] The Application describes a technology for supporting point-to-point intracluster communications between replicated cluster nodes, while enabling communication protocol layer components of the cluster nodes to continue to operate in a cluster mode.

[0017] The Examiner's rejection is based upon **Bommareddy: Bommareddy, et al.**, US Patent No. 6,880,089, which describes firewall clustering for multiple network servers to supply high-availability and scaling of processing capacity. Flow controllers are placed on both sides of the firewalls to ensure that traffic for a given client-server session flows through the same firewall in both inbound and outbound directions. (Bommareddy, Abstract).

## **Anticipation Rejections**

[0018] Applicant submits that the anticipation rejections are not valid because, for each rejected claim, no single reference discloses each and every element of that rejected claim.<sup>1</sup> Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by each rejected claim.<sup>2</sup>

### **Based upon Bommareddy**

[0019] The Examiner rejects claims 1-13, 19-32, 38-49 and 53-59 under 35 U.S.C. § 102(e) as being anticipated by Bommareddy. Applicant respectfully traverses this rejection. Based on the reasons given below, Applicant asks the Examiner to withdraw the rejection of these claims.

### **Independent Claim 1**

[0020] As presented in the response to the previous Office Action, Applicant submits that Bommareddy does not disclose the following elements of claim 1, as previously presented (emphasis added):

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<sup>1</sup> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

<sup>2</sup> See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

A method for conducting physical address discovery, **facilitating point-to-point communications between hosts of a cluster** operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the method comprising the steps of:

**receiving *by a target host within the cluster*, an address discovery request** initiated by a source host seeking a physical address of the target;  
and

**generating *by the target host*, an address discovery response** acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises:

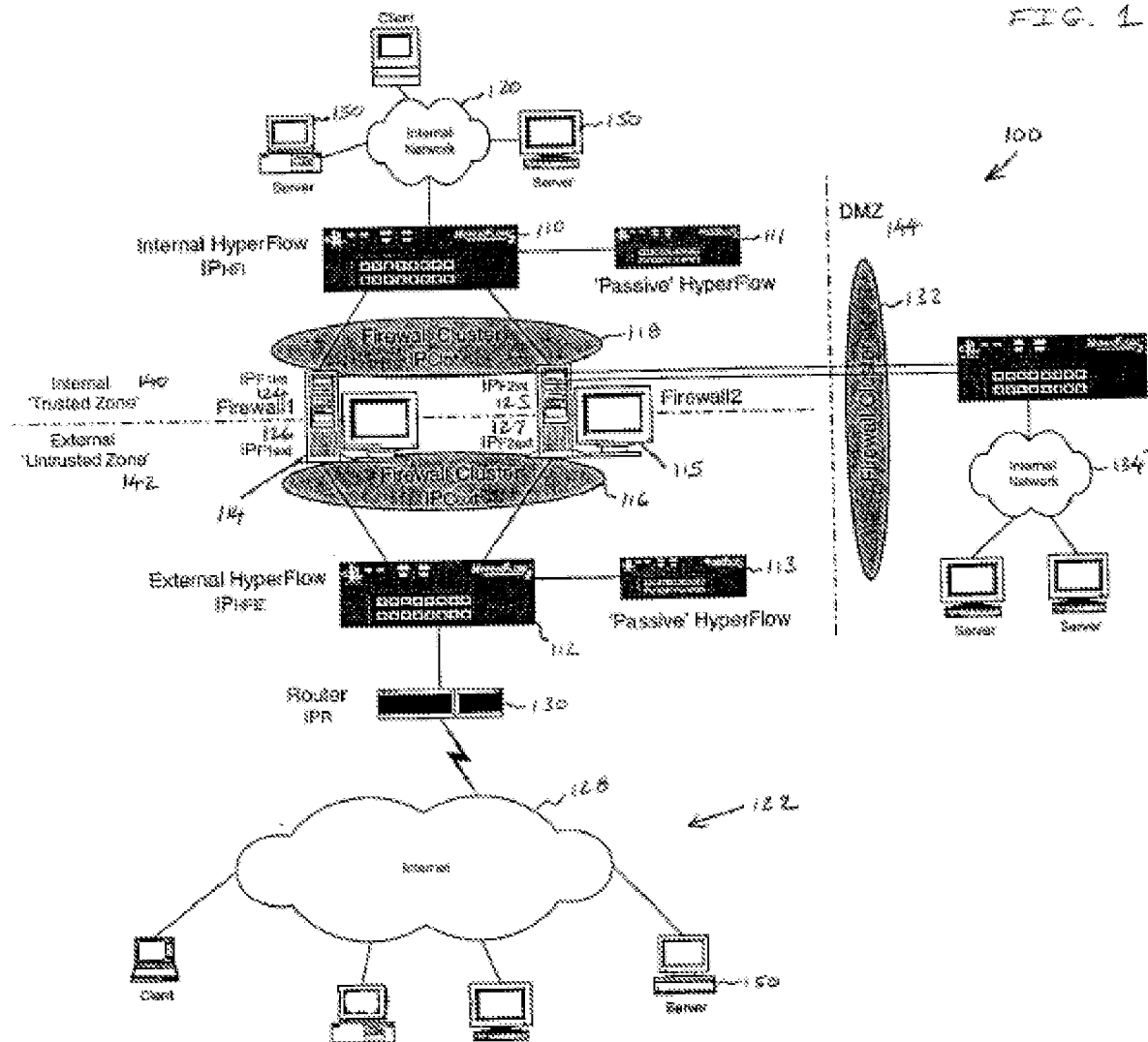
a response source physical address field specifying a **non-cluster mode** physical address of the target host.

[0021] The previously submitted amendments to claim 1 were intended to clarify that the receiving and generating were being performed by a host within the cluster. However, it appears that the Examiner has failed to address this distinction.

[0022] With reference to claim 1, the Examiner cites Bommareddy column 4, lines 18-38; column 22, lines 46-64; column 22, lines 53-60; and column 22, line 65 – column 23, lines 7. (Office Action, pages 2-3.)

[0023] With specific reference to the claimed “receiving”, the Examiner states, referring to the cited portion of Bommareddy, “the internal network flow controller receives an ARP request for an internal address of a node.” (Office Action, page 2.) As discussed in the previously submitted response to the Office Action dated 7/24/07, according to claim 1, the target host that receives the address discovery request is “within the cluster”. In contrast, the flow controller described in Bommareddy is separate from

the cluster – not within the cluster, as recited in claim 1. This is illustrated in Bommareddy, Fig. 1, reproduced below:





[0024] As described in Bommareddy, column 6, lines 25-29, firewall cluster 118 is managed by internal flow controller 110 and firewall cluster 116 is managed by an external network flow controller 112. The internal flow controllers are not part of the firewall clusters.

[0025] The Examiner contends that Bommareddy, column 22, lines 46-64 and column 4, lines 18-38 describe, “the internal network flow controller receives an ARP request for an internal address of a node.” (Office Action, page 2.) Accordingly, a network flow controller of Bommareddy receiving an ARP request does not disclose the claimed, “receiving *by a target host within the cluster*, an address discovery request.”

[0026] With specific reference to the claimed “generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises: a response source physical address field specifying a non-cluster mode physical address of the target host,” the Examiner states, referring to the cited portion of Bommareddy, “the flow controller responds with a MAC address associated with the firewall cluster IP<sub>cint</sub>.” (Office Action, page 3.)

[0027] With specific reference to the claimed “a response source physical address field specifying a non-cluster mode physical address of the target host,” the Examiner states, referring to the cited portion of Bommareddy, “the ARP response includes a MAC address of the cluster and a destination IP address.” (Office Action, page 3.) Specifically, the Examiner cites Bommareddy column 22, lines 53-60; Bommareddy, column 22, line 65 – column 23, line 7; and column 4, lines 18-38. Column 22, lines 53-60 states:

The network flow controller 810 responds to an ARP Request packet with a cluster IP address received on a Router Port by sending the MAC address of the network flow controller 810. The router then uses the network flow controller 81- MAC address when sending packets for the cluster IP address. The network flow controller 81- receives all traffic from Router Ports directed at clusters.

[0028] Column 22, line 65 – column 23 states:

The network flow controller 810, on receiving an ARP Request from a server, intercepts the ARP Request. The network flow controller 810 modifies the ARP Request source information, including MAC and IP addresses, such that the information appears to have been sent by network flow controller 810 rather than by one of the servers. The modified ARP Request is then broadcast. Upon receiving a reply, network flow controller 810 modifies the ARP Reply destination information, including MAC and IP addresses. A copy of the ARP Reply is sent back directly to each server within the cluster.

[0029] Bommareddy describes the network flow controller acting as an intermediary, modifying the addresses of the request so that the servers will accept the request. However, Bommareddy does not disclose the claimed, “facilitating point-to-point communications between hosts of a cluster... receiving by a target host within the cluster, an address discovery request initiated by a source host seeking a physical address of the target; and generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises: a response source physical address field specifying a non-cluster mode

physical address of the target host.” The network flow controller of Bommareddy is not a host of a cluster.

[0030] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as previously presented. Furthermore, Applicant herein amends claim 1 to even more clearly indicate that the source host and the target host are **both** hosts within the same cluster.

[0031] Bommareddy does not disclose all of the elements of claim 1, either as previously presented, or as currently amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 2-13 and 19*

[0032] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

[0033] For example, Applicant submits that Bommareddy does not disclose the following elements of **claim 6** (emphasis added):

determining ***by the target host*** whether the address discovery request was issued by a source host operating in the cluster mode.

[0034] With reference to claim 6, the Examiner cites Bommareddy, column 22, lines 41-48 and 61-67, and states, “the flow controller determines whether the address

request originated from a device in the cluster or a device external to the network.”  
(Office Action, page 4.)

[0035] According to claim 6, the “determining whether the address discovery request was issued by a source host operating in the cluster mode,” is performed by the target host, which, according to claim 1, is within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “determining by the target host...”

[0036] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

[0037] Regarding claim 11, Applicant submits that Bommareddy does not disclose the following element (emphasis added):

maintaining, by the target host, a list of network communication  
protocol-specific addresses corresponding to hosts within the cluster.

[0038] With reference to claim 11, the Examiner cites Bommareddy, column 17, lines 15-25, and states, “the flow controller maintains a hash table with the IP addresses of the cluster servers.” (Office Action, page 5.)

[0039] Claim 11 specifies that the “list of network communication protocol-specific addresses corresponding to hosts within the cluster” is maintained by the target host, which, according to claim 1, is a host within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “maintaining, by the target host...”

[0040] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Independent Claim 20

[0041] Claim 20 recites elements similar to those recited in claim 1. Furthermore, claim 20 is amended herein to further clarify that the address discovery request is initiated by a source host within the cluster. Accordingly, for reasons similar to those presented above with reference to claim 1, Bommareddy does not disclose all of the claimed elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 21-32 and 38

[0042] These claims ultimately depend upon independent claim 20. As discussed above, claim 20 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 39

[0043] Applicant submits that Bommareddy does not disclose the following elements of claim 39 (emphasis added):

A host computer system including physical address discovery components facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the host computer system comprising:

a network interface for receiving an address discovery request initiated by a source host within the cluster, seeking a physical address of a target host within the cluster;

a transport layer component for carrying out transport-protocol specific processing of network requests; and

intracluster address discovery logic interposed between the network interface and the transport layer component of the host system, the intracluster address discovery logic performing the step of:

generating an address discovery response acceptable by the source host operating in the cluster mode and including:

a response source physical address field specifying a non-cluster mode physical address of the target host,

**wherein the host computer system is one of the hosts of the cluster operating in the cluster mode.**

[0044] In the previously submitted response to the Office Action dated 7/24/97, claim 39 was amended to clarify that, “the host computer system is one of the hosts of the cluster operating in the cluster mode.” The rejection presented in the current Office Action does not address this element of claim 39.

[0045] Furthermore, the rejection of claim 39 points to descriptions of the flow controller of Bommareddy. As discussed above, the flow controller of Bommareddy is not “one of the hosts of the cluster”, as required by claim 39. Consequently,

Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 40-49 and 53*

[0046] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

*Independent Claim 54*

[0047] Applicant submits that Bommareddy does not disclose the following elements of claim 54, as amended (emphasis added):

A method for processing point-to-point communications between hosts of a cluster operating in a cluster mode implemented by a network communication protocol-specific layer of each host, and wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving an intracluster message issued by an initiating host of the cluster, the intracluster message including within a message destination field, a non-cluster mode physical address of a target host of the cluster;

the target host replacing, within the intracluster message, the non-cluster mode physical address with the shared cluster address; and

presenting, after the replacing, the intracluster message to the network communication protocol-specific layer.

[0048] With reference to claim 54, the Examiner cites Bommareddy column 22, lines 46 – column 23, lines 7. (Office Action, page 13.) With specific reference to the claimed “receiving”, the Examiner states, referring to the cited portion of Bommareddy, “router or server “source host” may send an ARP request to a traffic controller “network interface” to find out the address of destination server.” (Office Action, page 13.)

[0049] Claim 54 recites, “receiving an *intracluster* message.” Based on the definition of the prefix “intra-”, which means “within”, the message that is received, is a message “within” the cluster, meaning, as supported by the specification, that the message is both sent and received within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Applicant submits that Bommareddy does not disclose an intracluster message, and specifically does not disclose the claimed, “receiving an intracluster message...”

[0050] Furthermore, with specific reference to the claimed “the target host replacing”, the Examiner states, referring to the cited portion of Bommareddy, “the flow controller replaces the address field in the ARP request with its own MAC address information.” (Office Action, page 13.) Applicant respectfully submits that the “flow controller” of Bommareddy is not within the cluster, and therefore cannot be equated to “the target host”.

[0051] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.



### Dependent Claims 55-58

[0052] These claims ultimately depend upon independent claim 54. As discussed above, claim 54 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

### Independent Claim 59

[0053] Applicant submits that Bommareddy does not disclose the following elements of claim 59 (emphasis added):

A method for **performing point-to-point communications between hosts of a cluster operating in a cluster mode**, wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving **by a target host within the cluster**, an address discovery request seeking a physical address of the target host;

determining **by the target host**, that the address discovery request was issued by a source host within the cluster, operating in the cluster mode;

generating **by the target host**, an address discovery response acceptable by the source host operating in the cluster mode, the address discover response including:

a response source physical address field specifying a non-cluster mode physical address of the target host;

receiving **by the target host**, an intracluster message issued by the source host, the intracluster message including a non-cluster mode physical address of the target host within a message destination field;

replacing, within the intracluster message **by the target host**, the non-cluster mode physical address with the shared cluster address; and

presenting, after the replacing step, the intracluster message to a network communication protocol-specific layer of the target host.

[0054] Claim 59 recites elements that are similar to those recited in, and discussed above with reference to claims 1, 6, and 54. Accordingly, at least for reasons similar to those presented above with reference to claims 1, 6, and 54, claim 59 is also allowable. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

### **Dependent Claims**

[0055] In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

## Conclusion

[0056] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call or email me or my assistant at your convenience.

Respectfully Submitted,

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